

# HISTORIC PROPERTY INVENTORY FORM

## IDENTIFICATION SECTION

**Field Site No.** 182-B **OAHP No.** \_\_\_\_\_ **Date Recorded** 26 April 1995  
**Site Name Historic** Reservoir and Pump House Revised 29 May 1998  
**Common** \_\_\_\_\_  
**Field Recorder** Sheri Quinn, Ian Lindsay, Joy Keating  
**Owner's Name** U.S. Department of Energy, Richland Operations Office  
**Address** P.O. Box 550  
**City/State/Zip Code** Richland, WA 99352

State of Washington, Department of Community Development  
Office of Archaeology and Historic Preservation  
111 21st Avenue Southwest, Post Office Box 48343  
Olympia, Washington 98504-8343 (206)753-4011

## Status

- ☒ Survey/Inventory  
☐ National Register  
☐ State Register  
☐ Determined Eligible  
☐ Determined Not Eligible  
☐ Other (HABS, HAER, NHL)  
☐ Local Designation

## Photography

Photography Neg. No. HCRL: Roll 154, frames 14-19  
(Roll No. & Frame No.) Roll 200, frames 26-31  
View of All exterior facades  
Date 26 April 1995

Photo at right; Roll 154, Frame 14  
view of east facade

**Classification** ☐ District ☐ Site ☒ Building ☐ Structure ☐ Object  
**District Status** ☒ NR ☐ SR ☐ LR ☐ INV  
**Contributing** ☒ **Non-Contributing** ☐  
**District/Thematic Nomination Name** Hanford Site Manhattan Project and Cold War Era Historic District

## Description Section

### Materials & Features/Structural Types

**Building Type** Industrial  
**Plan** Modified rectangular  
**Structural System** Steel frame  
**No. of Stories** 1-2

### Roof Type

☐ Gable ☐ Hip  
☒ Flat ☐ Pyramidal  
☐ Monitor ☐ Other (specify) \_\_\_\_\_  
☐ Gambrel  
☐ Shed

### Cladding (Exterior Wall Surfaces)

- ☐ Log  
☐ Horizontal Wood Siding  
    Rustic/Drop ☐  
    Clapboard ☐  
☐ Wood Shingle  
☐ Board and Batten  
☐ Vertical Board  
☐ Asbestos/Asphalt  
☐ Brick  
☐ Stone  
☐ Stucco  
☐ Terra Cotta  
☒ Concrete/Concrete Block (both)  
☐ Vinyl/Aluminum Siding  
☐ Metal (specify) \_\_\_\_\_  
☐ Other (specify) \_\_\_\_\_

### Roof Material

☐ Wood Shingle  
☐ Wood Shake  
☐ Composition  
☐ Slate  
☒ Tar/Built-up  
☐ Tile  
☐ Metal (specify) \_\_\_\_\_  
☒ Other (specify) reinforced concrete slab  
☐ Not visible

### Foundation

☐ Log ☐ Concrete  
☐ Post & Pier ☐ Block  
☐ Stone ☒ Poured  
☐ Brick ☐ Other (specify) \_\_\_\_\_  
☐ Not visible

## Integrity

(Include detailed description in  
**Description of Physical Appearance**)

	Intact	Slight	Moderate	Extensive
Changes to plan	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Changes to windows	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Changes to original cladding	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Changes to interior	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other (specify)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

## LOCATION SECTION

**Address** Building 182-B, 100 B Area  
**City/Town/County/Zip Code** Richland/Benton County/99352  
**Twp** 13 N **Range** 25 E **Section** 11 **1/4 Section** SE **1/4 1/4 Sec** \_\_\_\_\_  
**Tax No./Parcel No.** \_\_\_\_\_ **Acreage** \_\_\_\_\_  
**Quadrangle or map name** Riverland, Washington Quad - 7.5 min series 1992  
**UTM References Zone** 11 **Easting** 298214 **Northing** 5168360  
**Plat/Block/Lot** \_\_\_\_\_  
**Supplemental Map(s)** \_\_\_\_\_



### High Styles/Forms (Check one or more of the following)

- |   |   |
|---|---|
| <input type="checkbox"/> Greek Revival            | <input type="checkbox"/> Spanish Colonial Revival/Mediterranean |
| <input type="checkbox"/> Gothic Revival           | <input type="checkbox"/> Tudor Revival                          |
| <input type="checkbox"/> Italianate               | <input type="checkbox"/> Craftsman/Arts & Crafts                |
| <input type="checkbox"/> Second Empire            | <input type="checkbox"/> Bungalow                               |
| <input type="checkbox"/> Romanesque Revival       | <input type="checkbox"/> Prairie Style                          |
| <input type="checkbox"/> Stick Style              | <input type="checkbox"/> Art Deco/Art Moderne                   |
| <input type="checkbox"/> Queen Anne               | <input type="checkbox"/> Rustic Style                           |
| <input type="checkbox"/> Shingle Style            | <input type="checkbox"/> International Style                    |
| <input type="checkbox"/> Colonial Revival         | <input type="checkbox"/> Northwest Style                        |
| <input type="checkbox"/> Beaux Arts/Neoclassical  | <input type="checkbox"/> Commercial Vernacular                  |
| <input type="checkbox"/> Chicago/Commercial Style | <input type="checkbox"/> Residential Vernacular (see below)     |
| <input type="checkbox"/> American Foursquare      | <input checked="" type="checkbox"/> Other (specify)             |
| <input type="checkbox"/> Mission Revival          | <u>Industrial Vernacular</u>                                    |

### Vernacular House Types

- |   |   |
|---|---|
| <input type="checkbox"/> Gable Front          | <input type="checkbox"/> Cross Gable      |
| <input type="checkbox"/> Gable Front and Wing | <input type="checkbox"/> Pyramidal/Hipped |
| <input type="checkbox"/> Side Gable           | <input type="checkbox"/> Other (specify)  |

## NARRATIVE SECTION

### Study Unit Themes (check one or more of the following)

☐ Agriculture  
☐ Architecture/Landscape Architecture  
☐ Arts  
☐ Commerce  
☐ Communications  
☐ Community Planning/Development

☐ Conservation  
☐ Education  
☐ Entertainment/Recreation  
☐ Ethnic Heritage (specify) \_\_\_\_\_  
☐ Health/Medicine  
☐ Manufacturing/Industry  
☐ Military

☐ Politics/Government/Law  
☐ Religion  
☒ Science & Engineering  
☐ Social Movements/Organizations  
☐ Transportation  
☒ Other (specify) Manhattan Project and Cold War Eras  
☒ **Study Unit Sub-Theme(s)** Reactor Operations, Water Treatment

### Statement of Significance

Date of Construction 1944 Architect/Engineer/Builder Manhattan Engineer District and DuPont Company

☒ In the opinion of the surveyor, this property appears to meet the criteria of the National Register of Historic Places.

☒ In the opinion of the surveyor, this property is located in a potential historic district (National and/or local).

The 182-B facility provided water for three essential functions of operation. One function was the provision of reserve (secondary backup) water for reactor cooling. A supply of this water was necessary to continuously remove the heat generated by reactor operations, mainly within the uranium fuel and graphite moderator. Keeping the reactor cool was necessary to avoid a fuel meltdown and subsequent unplanned fission releases. Secondly, it supplied water for steam condensers which operated within the Secondary Coolant System. This system was an emergency/backup system that would provide steam-generated electrical power and adequate cooling water to the reactor. The third function was to supply raw water (also known as "export water") to the 100 and 200 Areas through export pumps and miles of waterlines. The export water system supplied all the water used on the Hanford Site and was accessible through only two pumping stations; this one in 100-B Area and a back-up in the 100-D Area.

Initially, the 182-B reservoir was used as the principal water supply source for the 183-B Filter Plant where water would be filtered and chemically treated to allow for easy flow through the reactor process tubes without causing filming. However, the process of using water from 182-B was modified in the post-World War II era. Under project CG-558 in 1956-1957, the 181-B River Pump House became the primary water source for the Filter Plant.

The 182-B facility was an important part of the reactor plant cooling system because it supplied the reserve water for reactor cooling. The facility currently remains active as part of the Export Water System. There is a large aboveground diesel storage tank at the facility that supplies fuel to four emergency diesel pumps and one diesel-powered, emergency electrical generator. Also located within the facility is a small water filtration and chlorination system that supplies sanitary water to the facility. The 182-B Reservoir and Pumphouse played an critical role in importing and exporting the necessary water supply not only for the 100-B Area and reactor operations, but also site-wide. It is therefore the conclusion of the U.S. Department of Energy that Building 182-B is eligible for inclusion in the National Register of Historic Places under Criterion A as a contributing property within the Hanford Site Manhattan Project and Cold War Era Historic District.

### Description of Physical Appearance

The 182-B facility is comprised of a reservoir, three small inlet houses at the corners of the reservoir, and a pump house with associated structures. Each portion of the facility will be discussed separately.

The **reservoir** consists of a rectangular, sloped, reinforced concrete basin with total dimensions of 432 ft. (E-W) by 518 ft. (N-S) by 18 ft. deep. The bottom is a poured reinforced concrete slab 6 in. thick; the sloping sides are of reinforced gunite 4 in. thick; and the vertical portion of the side walls is of poured reinforced concrete 10 in. thick. The reservoir is divided into two sections by a 10 in. thick reinforced concrete wall running east-west. The section north of the dividing wall is known as the inlet section, or reserve section and holds 15 million gallons of water. The other section, known as the working section, holds 10 million gallons. The top of the dividing wall is approximately 2.75 ft. below the top of the side walls, and thus acts as a weir between the two sections. Water is admitted to the reservoir through a 42 in. steel pipeline from the 181-B River Pump House via Inlet House No. 1 located at the northwest corner of the reservoir.

**Inlet House No. 1** is a two story, steel framed, reinforced concrete and concrete block structure. The first story contains the main level control cone valves for the inlet pipes to the reservoir. The second floor of the Inlet House contains the chlorinating equipment for chlorinating the incoming water. On the east wall of this floor is a single door

(see continuation)

**Continuation of Historic Property Inventory Form: 182-B**

with a metal stairway leading up to it. The two cone valves discharge into two inlet weirs which overflow into the reserve section. A one story, reinforced concrete and concrete block Inlet House No. 2 is located near the northeast corner of the reservoir. The building houses a 30 in. float-control cone valve on a 42 in. concrete line. The line is an emergency supply to the reservoir coming from the river pump.

On the east wall of **Inlet House No. 2** is a large, metal double door. A large pipe or duct is visible emerging from the north wall. **Inlet House No. 3** is located at grade at the southwest corner of the 182-B Pump House roof and contains the level control cone valve for the 42 in. reservoir by-pass line from the 181-B River Pump House. This valve discharges in the nearest suction well rather than into the reservoir. Large, metal, double doors are visible on the east and south walls, and a large metal pipe or duct emerges from the south wall.

The 182-B **Pump House** is a concrete block structure that lies along the east edge of the reservoir. The Pump House is an essentially below ground level structure which houses the necessary pumping equipment to transfer the water from the reservoir to other process buildings within the area and also to the 200 Area process plants. Located next to the reservoir wall are a series of seven reinforced concrete-enclosed suction wells. The water enters each of these wells or compartments through a 4 sq. ft., manually operated sluice gate. Fish screens are located in front of four of the sluice gates. Next to and paralleling the suction wells is the pump room containing the various pieces of pumping equipment. The pump room is enclosed on one side by the dividing wall between the suction wells and on the other side by a reinforced concrete wall. The roof of the pumps is a reinforced concrete slab supporting an electrical switchgear room at the south end and seven overhead barometric condensers at the north end. The seven barometric condensers at the north end of the pump house were supported by structural steel framework. These condensers were located approximately 48 ft. above the slab roof of the Pump Room. The steel girders that supported the overhead barometric condensers are still present, but the barometric condensers appear to have been removed. The electrical switchgear room above the pumps is an enclosed concrete block structure having a pre-cast cement tile roof. Three vents are located on the roof of this structure, a large, metal double door is present on the south and north walls, and the building has no windows. It has a raised foundation, and steps lead up to it. Besides Inlet House No. 3, there is a small L-shaped, concrete block building near the center of the east wall of the reservoir between two section wells. Another small, square, concrete block structure is located at the northeast corner of the Pump House. A single door is on its east wall.

While the facility is currently active, access to the interior was not obtained, thus the status and condition of equipment inside the facility could not be determined.

**Major Bibliographic References**

Carpenter, R.W. 1994. *100-B Area Technical Baseline Report* . WHC-SD-EN-TI-220, Westinghouse Hanford Company. Richland, Washington.

DuPont Corporation. 1946. *Construction of Hanford Engineer Works: History of the Project* . HAN-10970, Vol. I-IV. GEH-26434 E.I. DuPont de Nemours and Co. Wilmington, Delaware.

Gerber, M.S. 1992. *Manhattan Project Buildings and Facilities at the Hanford Site: A Construction History* . WHC-MR-0425, Westinghouse Hanford Company. Richland, Washington.

Gerber, M.S., et al. 1995. *National Register of Historic Places Multiple Property Documentation Form* . Battelle Pacific Northwest Laboratories. Richland, Washington.

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Mattair, Steve (DynCorp Tri-Cities Services Inc.). February 1998. Personal Communication. Richland, Washington.

Rockwell International. No Date. 200 Areas Fact Book. Richland, Washington.

Wahlen, R.K. 1989. *History of the 100-B Area* . WHC-EP-0273 Westinghouse Hanford Company. Richland, Washington.